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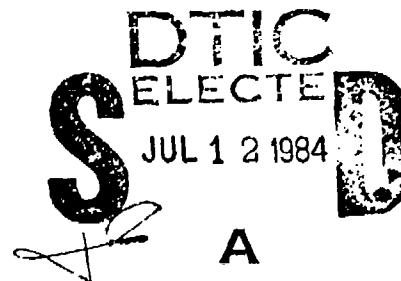
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## **Characteristics and Performance of Recruits Enlisted With General Education Development (GED) Credentials**

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Barbara Means  
Janice H. Laurence



HUMAN RESOURCES RESEARCH ORGANIZATION  
1100 South Washington Street • Alexandria, Virginia 22314-4499

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Prepared for:

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hold GED credential tends to fluctuate with the recruiting market, with higher percentages of GED holders accepted when fewer high school diploma graduates are available.

Compared to diploma graduate accessions, recruits who hold GED credentials are more likely to be male, white, over 20 years of age upon service entry, and to have Armed Forces Qualifying Test (AFQT) percentile scores of 50 or above.

GED holders consistently perform less well than diploma graduates in terms of military suitability indices such as attrition rates or retention beyond an initial term. The large difference between GED holders and diploma graduates in terms of attrition are not mitigated by aptitude or service occupational specialty group. Within any given AFQT category, the 36-month attrition rate for GED holders is at least 20 percent higher than that for diploma graduates. Within any of the eight DoD occupational specialty groupings, the attrition rate for GED holders is considerably higher than that for diploma graduates. In fact, for 29 of the 32 Service-occupation group combinations, the GED 36-month attrition rate is more than double that of high school graduates. Age is more strongly related to attrition rate for GED holders than for other education groups. Older GED holders have lower attrition rates than GED holders who were younger at the time of service entry. Nevertheless, even among older accessions, GED holders experience adverse attrition rates between 10 and 11 percent higher than those of high school graduates of the same age.

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## Foreword

The Directorate for Accession Policy, Office of the Assistant Secretary of Defense (Manpower, Installations and Logistics), has responsibility for policy oversight in the area of military enlistment standards. Congress has urged the Department of Defense (DoD) and the Services to develop a strong foundation of empirical research upon which enlistment standards can be based. The particulars of these standards may be an important issue in planning for the coming decade when a dwindling supply of young people will be available as potential military accessions. At present, enlistees must meet minimum standards in terms of age, citizenship, physical and medical fitness, moral fitness, aptitude test scores, and educational level. While test scores and educational level have been shown to help predict military performance, current standards result in the acceptance of many persons who subsequently fail to complete their terms satisfactorily. As many as 15-20 percent of high school graduates and 30-40 percent of non-high school graduates are separated from the Services prior to completion of the first term because of failure to meet behavior or performance criteria.

At a time when the costs of selecting, classifying, training, and equipping new recruits are extremely high, it is important to try to minimize the enlistment of accessions who will fail to complete their first term. These concerns led the Directorate for Accession Policy, OASD(MI&L), to contract with the Human Resources Research Organization (HumRRO) for a study of existing enlistment criteria and the collection of data that could lead to improved criteria. That project, "Evaluation and Improvement of Educational and Moral Standards for Entry into the Armed Forces," began in March 1982.

To fulfill the project objectives, HumRRO has undertaken both analyses of existing data reflecting upon the predictive validity of current enlistment standards and the collection of more detailed background information on samples of FY 1983 applicants and recruits. Between February and June of 1983, over 34,000 military applicants and 40,000 recruits drawn from all four Services completed the Educational and Biographical Information Survey (EBIS), a

HumRRO-designed instrument designed to elicit more extensive information concerning educational experiences and past behavior than is collected through current military screening practices.

As the individuals who took the EBIS move through their first terms of service, performance data will be collected and the predictive value of EBIS items will be analyzed. An overall evaluation of education and moral standards and suggested recommendations for streamlining or modifying procedures and criteria will be made after analysis of the EBIS data.

In the course of this project, a great deal of information concerning the characteristics and military performance of General Educational Development (GED) high school equivalency credential holders was obtained. During this same time period, the favorable recruiting market coupled with the Services' emphasis on recruiting high school graduates made it more difficult for GED holders to qualify for military service. Consequently, Service enlistment policies vis-a-vis GED holders became a major concern of the GED Testing Service of the American Council on Education.

The Department of Defense has worked with GED personnel to clarify military enlistment policies and to ensure that GED holders applying for military service are treated equitably. This report is a direct result of the interest expressed by both the GED Testing Service, and the Departments of Education and Defense.

In addition to background information on the GED testing program and existing Service policies with regard to GED holders, empirical data have been compiled from a variety of sources. Defense Manpower Data Center (DMDC) files have been used to tabulate information on both the demographic characteristics and the military performance of GED accessions over the past five years. A tape supplied by the GED Testing Service and linked to DMDC accession files permitted analyses of the relationship between subtest scores on the GED and on the Armed Services Vocational Aptitude Battery (ASVAB). The sample of GED

holders who took the EBIS administered in the spring of 1983 as part of HumRRO's Standards project provided a mechanism for checking the specific educational backgrounds of individuals coded as GED holders on DMDC records. Thus, this report contains a variety of different types of information and is intended as a reference document reporting what we have learned about GED holders in the military.

The authors gratefully acknowledge the contributions of individuals from several organizations external to HumRRO. Dr. W. S. Sellman, Acting Director, Accession Policy, within the Office of the Assistant Secretary of Defense (Manpower, Installations & Logistics) served as Technical Monitor for the Standards project. He and Dr. Anita S. Lancaster, also of the Office of the Assistant Secretary of Defense, provided valuable guidance, comments, and suggestions with respect to this report. The support of the Defense Manpower Data Center (DMDC) and in particular Mr. Leslie W. Willis, Ms. Helen T. Hagan, and Ms. Carolyn Stewart proved invaluable. These individuals merged the GED and DMDC data files and retrieved the DMDC manpower data included in this report. Gratitude is extended to Mr. Henry A. Spille, Mr. Douglas R. Whitney, Mr. Andrew G. Malizio, and Mr. Wayne M. Patience of the GED Testing Service of the American Council on Education for providing the GED Testing Service data as well as other information and guidance, which contributed to this report.

### **Summary**

Between FYs 1977 and 1982, General Educational Development (GED) credential holders comprised five percent of males and seven percent of females entering a first term of military service. These proportions exceed the representation of GED holders in the national youth population--GED holders comprised 3.4 percent of 18 to 24 year olds in 1980, according to the Profile of American Youth Study (Department of Defense, 1982). The Navy and Air Force have generally had larger proportions of GED holders than the Army and the Marine Corps.

Because high school graduates have been found to perform better in the military, all Services give diploma graduates preference for enlistment, and permit them to enter with lower aptitude scores than those required of GED holders. GED holders are, in turn, preferred to nongraduates by all Services except the Marine Corps, which does not distinguish between the latter two groups for enlistment purposes.

The proportion of new recruits who hold GED credentials tends to fluctuate with the recruiting market. A higher percentage of GED holders is accepted in months when fewer high school diploma graduates are available. Similarly, the proportion of GED holders among those enlisting in 1982 was smaller than in previous years as a result of a highly favorable recruiting market with an ample supply of diploma graduates seeking to enlist.

The characteristics of accessions enlisted with GED credentials can be compared to those of other education groups:

- As a product of the different aptitude standards applied to the two education groups, GED holders in military service are more likely than high school graduates to have Armed Forces Qualification Test (AFQT) scores of 50 or above.
- GED holders in military service tend to be older than high school graduate or nongraduate accessions.
- There is a smaller proportion of females among GED accessions than among high school graduate accessions (but a larger percentage than among nongraduates).
- GED accessions are more likely than high school graduate accessions to be white.
- The homes of record for GED accessions are distributed geographically in a pattern similar to that of other education groups, but GED holders are somewhat more likely than others to come from the South or West.

When measures of military performance are examined--whether total first-term attrition, adverse attrition, months served prior to separation, or retention beyond the first term--they all show similar patterns:

- Male accessions who are GED holders have 36-month total and adverse attrition rates roughly twice as large as those of diploma graduates.
- For the FY 1977 and 1978 cohorts of male non-prior service accessions, high school graduates served an average of 5.5 months longer than GED holders. For those entering service in FY 1979, the difference was 3.4 months.
- For the four groups analyzed, high school graduates were from 3 to 12 percent more likely than GED holders to still be in service after completion of their initial terms. Thus, the higher propensity of GED holders who are eligible for reenlistment to choose to do so, does not completely compensate for their lower eligibility rate.

The examination of possible artifactual sources for the "GED-high school graduate attrition gap" found no extraneous variable that could account for a large part of those attrition differences.

- Within any given AFQT category, the 36-month attrition rate for GED holders is at least 20 percent higher than that for diploma graduates.
- At all ages (at service entry), GED holders leave service for failure to meet minimum behavioral or performance standards at rates considerably higher than those for diploma graduates. However, attrition rates vary with age at service entry more for GED holders than for the other two education groups. Older GED holders have lower attrition rates than GED holders who were younger at the time of service entry. Nevertheless, even among older accessions, GED holders experience adverse attrition rates between 10 and 11 percent higher than those of high school graduates of the same age.
- Within any of the eight DoD occupational specialty groupings, the 36-month attrition rate for GED holders is considerably higher than that for diploma graduates. In fact, for 29 of the 32 Service-occupation group combinations, the GED attrition rate is more than double that of high school graduates.

Another hypothetical contributor to the high attrition rates found when military performance data for GED holders are analyzed is the possible inclusion of large numbers of individuals in the GED group who have other equivalency certificates and are not really GED credential holders. Because the education credential codes used by the Defense Manpower Data Center (DMDC) do not include a code for high school equivalencies based on tests other than the GED, it is quite possible that individuals with these other equivalencies are included with GED holders in computing attrition rates. To estimate the extent of this problem, the 1,442 recruits who were coded as GED holders on their DMDC records from among the 40,000 recruits who took the Educational and

Biographical Information Survey (EBIS) were identified. Of these, 89 percent indicated on the EBIS that they held a GED credential; 4 percent reported holding an equivalency based on taking a test other than the GED; 3 percent said they had regular diplomas; and 2 percent said they had adult education diplomas.

As a whole, these analyses add to the existing body of empirical support for Service policies treating GED holders as less preferred candidates for enlistment than high school graduates. Research aimed at isolating variables characterizing the best risks from among GED holders is recommended.

## Table of Contents

	<u>Page</u>
<b>Foreword.....</b>	ii
<b>Summary.....</b>	v
<b>Background.....</b>	1
<b>GED Program: Origins and Current Practices.....</b>	4
<b>Characteristics of Military Accessions Holding GEDs.....</b>	9
<b>Military Performance of GED Holders.....</b>	21
Occupational Assignments.....	30
Codes for Education Level.....	38
<b>GED/Accession Sample.....</b>	41
Sample Characteristics.....	41
Relationship Between GED Scores and ASVAB Scores.....	44
<b>Summary and Conclusions.....</b>	48
<b>References.....</b>	51

## List of Tables

	<u>Page</u>
1. Percentage of Accessions With GED High School Equivalency Credentials by Service, FYs 1976-82.....	9
2. Educational Distribution for FY 1982 Male Non-Prior Service Accessions by Service and Month of Entry.....	11
3. FY 1981 and 1982 NPS Accessions by Education Level, AFQT Category, Sex, and Race (ARMY).....	13
4. FY 1981 and 1982 NPS Accessions by Education Level, AFQT Category, Sex, and Race (NAVY).....	14
5. FY 1981 and 1982 NPS Accessions by Education Level, AFQT Category, Sex, and Race (AIR FORCE).....	15
6. FY 1981 and 1982 NPS Accessions by Education Level, AFQT Category, Sex, and Race (MARINE CORPS).....	16
7. Age Distribution of NPS Accessions, FYs 1979-82 by Education Level.....	18
8. Percent of NPS Accessions, FYs 1979-82, From Each Geographic Region by Education Level.....	20
9. Percent 0-36 Month Attrition for FY 1979 Male NPS Accessions, by Service, AFQT Category, and Education Level.....	21
10. Percent 0-36 Month Adverse Attrition for FY 1977-1979 Male NPS Accessions by Education Level, Service, and Year of Accession.....	22
11. Percent 0-36 Month Adverse Attrition for FY 1977-79 Female NPS Accessions, by Education and Service.....	23
12. Percent 0-36 Month Adverse Attrition Among FY 1979 NPS Accessions by Education Level, Age, and Service.....	24
13. Mean Number of Months Served (0-36) by NPS Male Accessions, by Year of Entry, Service, and Education Level.....	27
14. Retention Beyond the First 36 Months for FY 1978 and 1979 Accessions with Initial Three-Year Enlistments.....	29
15. Retention Beyond the First 48 Months for FY 1977 and 1978 Accessions with Initial Four-Year Enlistments.....	30

## List of Tables (Continued)

	<u>Page</u>
16. Occupational Assignments for FY 1979 NPS Male Accessions by Education Level and Service.....	32
17. Occupational Assignments for FY 1980 NPS Male Accessions by Education Level and Service.....	33
18. Occupational Assignments for FY 1981 NPS Male Accessions by Education Level and Service.....	34
19. Occupational Assignments for FY 1982 NPS Male Accessions by Education Level and Service.....	35
20. Percent 0-36 Month Attrition for NPS Male Accessions, FYs 1979-81, by Occupation Group, Education Level, and Service.....	37
21. Credential Reported by EBIS Recruit Respondents Classified as GED Holders on DMDC Files.....	40
22. GED Examinee/Accession Sample by Service.....	42
23. Age at Time of Examination and at Accession for GED Examinee/Accession Sample.....	43
24. GED Performance of GED Examinee/Accession Sample.....	43
25. Mean GED Subtest Scores for Examinees Entering Military Service, FY 1979-81.....	44
26. Correlations Between ASVAB and GED Subtests.....	46
27. ASVAB 8/9/10 Subtests Most Highly Correlated with Each GED Subtest.....	47

## List of Figures

	<u>Page</u>
1. Comparison of 0-36 Month Adverse Attrition Rates for FY 1979 GED and Nongraduate Accessions.....	26
2. Difference Between GED Credential Holders and Nongraduates in Months Served (0-36) for NPS Male Accessions, FY 1977-1979.....	28

## **Background**

Beginning with the Air Force in 1961, the Military Services instituted differential aptitude standards based on education level. By 1966, all four Services were using education criteria in conjunction with aptitude test scores to screen individuals for enlistment (Kim, Karpinos, Schwarz, & Slott, 1978). Specifically, since that time, non-high school graduates have been required to achieve higher aptitude scores than high school graduates to qualify for service.

This differential standard grew out of work on unsuitability discharges of Air Force enlistees (Flyer, 1959). High school graduates were found to be much less likely than nongraduates to be discharged for failure to meet minimum behavioral or performance criteria. This result has been corroborated in subsequent studies across all Services (e.g., Cheatham, 1978; Elster & Flyer, 1981; Flyer & Elster, 1983; Sinaiko, 1977; Scrull, 1974; Toomepuu, 1981) and provides the rationale for the more stringent aptitude test score standards applied to non-high school graduates. The intent is to accept only the "best" (i.e., those with higher aptitude scores) from among the less preferred non-high school graduate candidates.

Initially, persons possessing a General Educational Development (GED) high school equivalency credential were classified as high school graduates and, thus, they were a subset of the preferred group of applicants. However, research began to accumulate, and the findings indicated that GED credential recipients did not perform as well as holders of regular high school diplomas. As a result of this research, the enlistment classification of GED credential holders was changed in the 1970s. Currently, all Services require individuals

with GEDs to obtain higher aptitude scores than those set for high school diploma graduates. The Army, Navy, and Air Force use a three-category system for classifying education credentials. The enlistment aptitude requirements set by these Services for GED credential holders lie between the aptitude minimums set for high school diploma graduates and non-high school graduates. The Marine Corps uses a two-category system--high school diploma graduate and non-high school graduate with GEDs included in the latter category. The Army's aptitude requirements for GEDs appear to be only slightly less stringent than (and functionally are the same as) those for nongraduates (Eitelberg, Laurence, & Waters with Perelman, 1984). The Navy and Air Force, on the other hand, admit GED credential holders with aptitude scores considerably lower than the minimums set for non-high school graduates.

In general, military adjustment data showing performance differences between education categories provide the rationale for enlistment screening practices which differentiate by education level. The most researched military performance criterion is first-term attrition. First-term attrition is the failure on the part of enlisted recruits to complete successfully their initial period of obligation; that is, they separate from service prior to the end of their contracted enlistment term. The high school diploma is the best single indicator (presently and readily available) of a person's potential for adapting to the demands of military life as measured by satisfactory completion of the first term of enlistment (Department of Defense, 1978). A high school diploma graduate has almost an 80-percent probability of completing the first three years of service, while the probability for nongraduates averages around 60 percent (Department of Defense, 1981). The probability of attrition among GED credential recipients is generally closer to that of nongraduates

(Elster & Flyer, 1981; Laurence, 1983a). Such findings are very robust across Services and accession cohorts and demonstrate the validity of differential enlistment policies with regard to these credentials.

The present report addresses concerns of the public and education community regarding the content and rationale of military enlistment policies and the issue of whether GED credential holders are treated equitably. Because of the relative wealth of military data relating to GED holders, it was possible to devote an entire technical report to them and their treatment in the enlistment application process. Detailed demographic and performance data on ~~military applicants and recruits who hold GED credentials will be presented~~ following a brief discussion of the GED program's origins and current practices.

## **GED Program: Origins and Current Practices**

Many young men who were called to arms in the 1940s interrupted their education to serve in World War II. Concern developed over compensating returning veterans for their departure from formal educational activities and facilitating their readjustment to civilian life. Accordingly, the United States Armed Forces Institute (USAFI) testing experts were asked to develop an instrument which could be used to confer high school diploma equivalency status on soldiers who, although they had not finished high school, had equivalent academic skills and abilities. In this endeavor, the USAFI examination staff worked with an advisory committee established with the support of the American Council on Education, the National Association of Secondary School Principals, and the regional accrediting associations. Thus, in 1943, the General Educational Development (GED) high school equivalency program was born.

The GED program was designed to measure the academic skills that are typical of a sound general high school education. This was accomplished through a battery of five equally weighted tests that measured writing skills, social studies, science, reading skills, and mathematics content areas. Testing time for this multiple-choice format battery was 10 hours. The GED subject areas correspond to the basic high school curriculum, but their specific content is designed to avoid penalizing candidates who lack recent classroom experiences. The GED tests measure retention of broad concepts and the ability to comprehend, evaluate, and reason within the five content areas. They do not require rote memorization of facts and details.

Soldiers' GED test scores were interpreted by showing their standing relative to contemporary high school students. The original GED tests were normed on a sample of graduating high school seniors tested in 1943. Scores were, and continue to be, reported in terms of a standard score scale with a range from 20 to 80, a mean of 50, and a standard deviation of 10.

Since 1943, there has been tremendous and continued growth in the GED program. Shortly after World War II came to a close, the program was opened to civilians. From that point on, the American Council on Education (ACE) took over most of the USAFI's responsibilities for the guidance and direction of the GED program. In the 1950s, the states began to issue high school equivalency credentials based upon passing the GED tests. This development expanded the program's orientation from its original goal--to enhance veterans' ability to qualify for jobs or pursue postsecondary education upon discharge--to encompass providing civilians with the opportunity to obtain a diploma equivalent without finishing high school.

GED test norms have been periodically updated to ensure that they are representative of contemporary graduating seniors. Subsequent to the original norming in 1943, norming studies have been conducted in 1955, 1967, and 1980. The length of the test battery was shortened from the original 10 to 6 hours, and the tests' content was updated in 1977.

Today the GED testing program is operated jointly by the GED Testing Service of the American Council on Education (ACE) and each state department of education. ACE's Commission on Educational Credit and Credentials is responsible for nationwide GED policies and is the advisory body for the GED Testing Service. The individual states supervise the testing activities and

each sets its own requirements. All 50 states, the District of Columbia, U.S. Territories, and nine Canadian provinces and territories currently administer the GED tests. The tests are given at regular intervals at designated testing centers. In the United States there were 2,745 official GED centers in operation in 1982 (General Educational Development Testing Service, 1982a).

Although the GED program receives nationwide policy oversight, administrative procedures vary by state. States employ one of three types of minimum requirements for passing: (1) an overall average score for all five tests; (2) a minimum for each test or an average score for the entire battery; or (3) a minimum for each test and an overall average for the battery. States must set minimum requirements at or above the Commission on Educational Credit and Credential's standard, which is a minimum of 40 on each test or a mean of 45 for the entire battery. Most states use the third approach to setting standards with their actual requirements being a 35 minimum and a 45 average score. Although this may appear to be more lenient than the Commission's minimum, it is not, since only 69 percent of the 1980 norming group met this requirement as opposed to 74 percent who met the 40 or 45 standard (General Educational Development Testing Service, 1982b).

States also have differing residency, age, and length of time away from school requirements for taking the GED tests and issuing the GED credential. The latter requirements are imposed to avoid encouraging individuals to drop out of high school. Age requirements are used for much the same purpose. In some instances, an individual can take the GED tests, pass them, but not be awarded the equivalency credential until he or she has reached a certain age or until the high school class that the person would have belonged to has graduated. Residency requirements are used to guard against making it easy

for someone to travel among testing centers until the easiest requirements are found or the battery is passed.

Within the United States, 756,155 persons took the GED tests in 1982, and approximately two-thirds earned scores that qualified them for the credential in accordance with state criteria. According to a 1980 survey conducted by the GED Testing Service, approximately five percent of examinees take the GED tests primarily to enhance their probability of acceptance into military service (General Educational Development Testing Service, 1981). Slightly more females (i.e., 58 percent) than males were in the survey sample of GED test takers. However, estimates from the 1980 youth population (Department of Defense, 1982) indicated that among 18 to 23 year olds, more males than females actually possessed a GED equivalency credential (57 vs. 43 percent, respectively). Data from this latter nationally representative sample showed also that 66 percent of GED holders were white, 13 percent were Hispanic, and 21 percent were black. These figures coincided with those in the GED survey, which found that roughly 79 percent of surveyed test takers were white (including Hispanic) and 18 percent were black. The average age of examinees in the GED survey was 25, and approximately 37 percent were 19 years of age or younger. Most GED examinees came from the South (38 percent), followed in order by the Northeast (24 percent), North Central (21 percent), and the West (16 percent).

Although all states issue a credential on the basis of the GED tests, the actual title of the credential varies from state to state. Most states issue a credential which bears the word "equivalency"; however, some issue credentials labeled "high school diploma" that may be indistinguishable from regular high school diplomas. In addition, in some instances it may be possible for

individuals to obtain a regular diploma from their local school on the basis of GED testing. Regardless of the exact title, the GED credential is obtained in the same manner by all, and signifies that the holder possesses the knowledge and skills generally associated with high school instruction--that is, it is designed to be academically equivalent to the traditional diploma (Laurence, 1983).

### **Characteristics of Military Accessions Holding GEDs**

Between 1977 and 1982, GED high school equivalency credential holders comprised five percent of DoD male non-prior service accessions and seven percent of female accessions. Since 1976, the percentage of GED holders in each Service has ranged from a low of 2.6 percent for the Marine Corps in 1979 to a high of 11.8 percent for the Navy in 1981. As shown in Table 1, the percentage of GED holders in the Navy and the Air Force increased during the late 1970s. In contrast, the Army and the Marine Corps have never had more than five percent GED accessions. To a large extent, these accession figures are products of different enlistment policies: The Navy and Air Force allow GED holders to enter with lower AFQT scores than those required of nongraduates while the Marine Corps and, for all practical purposes, the Army do not. The sharp drop in the percentage of GED holders in the Air Force since the peak year of 1980 reflects the Air Force's recent success in recruiting high school graduates.

**Table 1**

#### **Percentage of Accessions With GED High School Equivalency Credentials by Service, FYs 1976-82**

Service	Fiscal Year						
	1976 <sup>a</sup>	1977	1978	1979	1980	1981	1982
Army	5.1	3.4	3.6	5.0	3.7	3.0	2.7
Navy	4.6	4.5	6.3	6.1	8.8	11.8	11.4
Air Force	4.6	3.7	7.6	9.1	11.2	7.3	3.6
Marine Corps	3.3	3.0	2.8	2.6	3.4	4.1	3.8
Total DoD	4.6	3.6	5.1	5.9	6.4	6.6	5.3
Number	18,243	13,543	15,469	18,183	22,821	21,325	15,652

**Source:** Defense Manpower Data Center, special analyses.

<sup>a</sup>Does not include FY 1976 transition quarter (July-September 1976).

Although they are not among the most preferred enlistment candidates, GED credential recipients' representation in the military tends to exceed that in the national population. In FYs 1981 and 1982, for example, roughly six percent of new recruits had GED credentials, and in FY 1983, approximately four percent of recruits held GEDs. The corresponding percentage in the national 18 to 23 year old population (as of 1980) is just 3.4 percent (Department of Defense, 1982).

In FY 1982, the percentage of GEDs among enlistees decreased, particularly in the Air Force, as the recruiting market became increasingly favorable. This drop in accession rate has raised concern about the treatment of GED credential holders applying for military enlistment. It should be pointed out that Service policies do not exclude GEDs from enlistment, but rather, as the data in Table 1 indicate, the Services are maximizing their intake of better-performing high school diploma graduates. All Services enlisted some GED holders in 1982, but in a given month or at a particular site, ample supplies of high school graduates may be available to meet recruiting goals. The figures in Table 2 show the monthly fluctuations in the proportion of male GEDs accessed within a single year. Generally, a smaller percentage of GEDs (and non-high school graduates) enter the military during the summer months when there is an adequate number of regular diploma graduates to fill military positions. In the Army, for example, the high point for male GEDs accessed in 1982 was in October (6.3 percent) and the low point was in June (0.4 percent). GED holders are being enlisted, but supply and demand tend to dictate when.

In addition to defining quality on the basis of education credentials, the Services also use aptitude scores as another primary quality indicator. Scores on the Armed Forces Qualification Test (AFQT)--the primary enlistment

**Table 2**  
**Educational Distribution for FY 1982 Male Non-Prior Service Accessions**  
**by Service and Month of Entry**  
**(percent)**

Service	Month of Service Entry											n
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	
<b>Army</b>												
GED	6.3	5.2	4.5	5.3	5.0	4.5	2.5	0.5	0.4	0.5	0.6	2.5
HSG	59.6	68.3	78.2	74.0	77.5	80.6	90.6	96.5	98.3	97.9	89.0	84.7
NHS	34.2	26.5	17.3	20.7	17.5	14.9	7.0	1.0	1.3	1.6	1.7	12.3
<b>Navy</b>												
GED	13.7	15.0	14.2	14.0	14.1	13.9	15.8	17.9	8.0	8.4	6.8	8.9
HSG	76.9	70.3	71.2	72.4	71.3	72.5	68.5	65.0	84.4	85.0	87.7	76.7
NHS	15.4	14.8	14.6	13.6	14.6	13.6	15.8	17.1	7.5	6.6	5.4	5.9
<b>Air Force</b>												
GED	4.6	4.9	5.1	4.9	5.4	4.5	3.6	3.1	1.0	2.2	2.1	3.7
HSG	92.6	92.6	92.6	92.5	92.4	93.8	94.8	95.5	98.0	97.0	97.3	96.4
NHS	2.8	2.4	2.4	2.6	2.2	1.6	1.6	1.4	1.0	0.8	0.6	1.7
<b>Marine Corps</b>												
GED	4.6	6.0	6.4	6.1	7.3	8.5	9.7	6.9	2.2	0.8	0.8	0.5
HSG	79.6	72.6	71.8	74.7	71.4	69.2	63.5	72.9	93.7	96.6	97.6	83.8
NHS	15.8	21.4	21.9	19.2	21.3	22.3	26.8	20.2	4.1	2.6	1.5	1.9

Source: Defense Manpower Data Center.

aptitude screen--are grouped into five main categories with two of the categories further subdivided as follows:

<u>AFQT Category</u>	<u>Percentile Range</u>
I	93-99}
II	65-92}
IIIA	50-64}
IIIB	31-49}
IVA	21-30}
IVB	16-20}
IVC	10-15}
V	1-9      markedly below average and not eligible to enlist

An applicant's AFQT score is used to predict general military trainability. For example, the training performance of persons scoring within the range of AFQT Categories I and II tends to be above average and the performance of those scoring in Category IV tends to be below average. Because of differential training performance, time, and costs, the Services try to maximize the enlistment of those in Categories IIIA and above.

The data in Tables 3, 4, 5, and 6 show the number of GED holders of each sex and race by AFQT category among FY 1981 and 1982 accessions in the Army, Navy, Air Force, and Marine Corps, respectively. For the Department of Defense as a whole, GED accessions are more likely than high school graduate accessions to have AFQT scores in Category IIIA or above (68 percent versus 57 percent for high school graduate males, 82 percent versus 55 percent of high school graduate females in 1982).<sup>1</sup> GED accessions are more likely than high

<sup>1</sup>This fact results from the higher aptitude standards applied to GED holders; in the national population, high school graduates have higher AFQT scores than GED holders (Department of Defense, 1982).

Table 3  
ARMY  
FY 1981 and 1982 NPS Accessions by Education Level,  
AFQT Category, Sex, and Race<sup>a</sup>

<b>FY 1981</b>										
GED	<b>White<sup>b</sup></b>					<b>Black</b>				
	Male		Female		N	%	Male		Female	
	N	%	N	%			N	%	N	%
AFQT I & II	750	28	107	34	47	11	4	7		
AFQT IIIA	634	24	82	26	78	18	10	18		
AFQT IIIB	1,176	44	121	38	285	65	41	72		
AFQT IV	93	4	7	2	27	6	2	4		
	<u>2,653</u>		<u>317</u>		<u>437</u>		<u>57</u>			
<b>HSG</b>										
AFQT I & II	18,852	35	3,557	34	1,276	6	389	6		
AFQT IIIA	9,680	18	2,096	20	1,723	8	675	10		
AFQT IIIB	11,510	21	2,896	27	4,833	22	2,308	36		
AFQT IV	14,417	26	2,027	19	14,638	65	3,115	48		
	<u>54,459</u>		<u>10,576</u>		<u>22,470</u>		<u>6,487</u>			
<b>NHS</b>										
AFQT I & II	2,434	15	124	21	124	5	9	11		
AFQT IIIA	3,418	21	142	24	314	13	11	14		
AFQT IIIB	8,807	55	299	51	1,463	61	50	62		
AFQT IV	1,472	9	23	4	516	21	11	14		
	<u>16,131</u>		<u>585</u>		<u>2,417</u>		<u>81</u>			
<b>FY 1982</b>										
GED	<b>White<sup>b</sup></b>					<b>Black</b>				
	Male		Female		N	%	Male		Female	
	N	%	N	%			N	%	N	%
AFQT I & II	1,096	40	2	25	79	19	1	20		
AFQT IIIA	1,044	38	3	38	152	37	2	40		
AFQT IIIB	580	21	2	25	181	44	1	20		
AFQT IV	4	0	1	12	1	0	1	20		
	<u>2,724</u>		<u>8</u>		<u>413</u>		<u>5</u>			
<b>HSG</b>										
AFQT I & II	25,726	40	4,796	46	2,087	9	735	17		
AFQT IIIA	12,320	19	2,725	26	2,643	12	1,212	27		
AFQT IIIB	14,750	23	2,778	27	7,181	32	2,420	54		
AFQT IV	11,847	18	51	1	10,853	48	78	2		
	<u>64,643</u>		<u>10,350</u>		<u>22,764</u>		<u>4,445</u>			
<b>NHS</b>										
AFQT I & II	3,087	27	3	38	190	13	3	50		
AFQT IIIA	4,260	38	3	38	427	30	1	17		
AFQT IIIB	3,878	34	1	12	810	56	2	33		
AFQT IV	28	0	1	12	7	0	0	0		
	<u>11,263</u>		<u>8</u>		<u>1,434</u>		<u>0</u>			

Source: Defense Manpower Data Center.

<sup>a</sup>Category V and Unknown AFQT cases are excluded.

<sup>b</sup>All non-black accessions.

**Table 4**  
**NAVY**  
**FY 1981 and 1982 NPS Accessions by Education Level,  
AFQT Category, Sex, and Race<sup>a</sup>**

FY 1981									
GED	White <sup>b</sup>				Black				
	Male N	Male %	Female N	Female %	Male N	Male %	Female N	Female %	
AFQT I & II	2,959	33	279	43	110	13	7	12	
AFQT IIIA	2,499	28	186	29	244	38	12	21	
AFQT IIIB	3,564	39	173	27	434	55	31	54	
AFQT IV	53	1	14	2	8	2	7	12	
	<u>9,075</u>		<u>652</u>		<u>796</u>		<u>57</u>		
HSG									
AFQT I & II	22,758	45	3,355	45	1,075	13	181	13	
AFQT IIIA	10,301	21	1,865	25	1,134	13	303	22	
AFQT IIIB	10,571	21	1,819	24	2,645	31	622	45	
AFQT IV	6,537	13	467	6	3,618	43	291	21	
	<u>50,167</u>		<u>7,506</u>		<u>8,472</u>		<u>1,397</u>		
NHS									
AFQT I & II	3,742	35	9	33	155	24	2	50	
AFQT IIIA	4,137	39	12	44	235	36	0	0	
AFQT IIIB	2,689	25	6	22	245	38	2	50	
AFQT IV	22	0	0	0	10	2	0	0	
	<u>10,590</u>		<u>27</u>		<u>645</u>		<u>4</u>		
FY 1982									
GED	White <sup>b</sup>				Black				
	Male N	Male %	Female N	Female %	Male N	Male %	Female N	Female %	
AFQT I & II	2,276	31	224	46	106	14	8	20	
AFQT IIIA	2,119	29	150	31	215	27	13	33	
AFQT IIIB	2,970	40	117	24	454	58	17	43	
AFQT IV	16	0	0	0	10	1	2	5	
	<u>7,381</u>		<u>491</u>		<u>785</u>		<u>40</u>		
HSG									
AFQT I & II	21,338	48	2,907	49	1,184	15	175	14	
AFQT IIIA	9,083	20	1,389	23	1,250	16	295	23	
AFQT IIIB	9,461	21	1,459	24	2,692	35	646	51	
AFQT IV	4,533	10	229	4	2,655	34	134	11	
	<u>44,415</u>		<u>5,984</u>		<u>7,781</u>		<u>1,270</u>		
NHS									
AFQT I & II	2,441	33	3	23	106	22	0	0	
AFQT IIIA	2,588	35	4	31	154	32	1	50	
AFQT IIIB	2,253	31	6	46	217	45	1	50	
AFQT IV	9	0	0	0	9	2	0	0	
	<u>7,291</u>		<u>13</u>		<u>466</u>		<u>2</u>		

Source: Defense Manpower Data Center.

<sup>a</sup>Category V and Unknown AFQT cases are excluded.

<sup>b</sup>All non-black accessions.

Table 5  
AIR FORCE  
FY 1981 NPS Accessions by Education Level,  
AFQT Category, Sex, and Race<sup>a</sup>

<b>FY 1981</b>									
<b>GED</b>	<b>White<sup>b</sup></b>				<b>Black</b>				
	Male N	Male %	Female N	Female %	Male N	Male %	Female N	Female %	
AFQT I & II	1,430	33	298	37	79	20	15	24	
AFQT IIIA	2,032	47	339	42	230	57	27	43	
AFQT IIIB	740	17	154	19	77	19	17	27	
AFQT IV	139	3	20	2	18	4	4	6	
	<u>4,341</u>		<u>811</u>		<u>404</u>		<u>63</u>		
<b>HSG</b>									
AFQT I & II	22,575	46	3,660	47	1,517	18	256	18	
AFQT IIIA	11,495	24	2,100	27	2,015	24	443	31	
AFQT IIIB	11,223	23	1,819	23	3,551	42	628	44	
AFQT IV	3,599	7	282	4	1,379	16	107	7	
	<u>48,892</u>		<u>7,861</u>		<u>6,462</u>		<u>1,434</u>		
<b>NHS</b>									
AFQT I & II	2,011	95	231	94	96	87	5	71	
AFQT IIIA	77	4	9	4	8	7	0	0	
AFQT IIIB	27	1	4	2	6	5	2	29	
AFQT IV	5	0	2	1	0	0	0	0	
	<u>2,120</u>		<u>246</u>		<u>110</u>		<u>7</u>		
<b>FY 1982</b>									
<b>GED</b>	<b>White<sup>b</sup></b>				<b>Black</b>				
	Male N	Male %	Female N	Female %	Male N	Male %	Female N	Female %	
AFQT I & II	848	42	110	49	66	36	10	38	
AFQT IIIA	1,141	57	113	51	112	61	14	54	
AFQT IIIB	14	1	0	0	5	3	2	8	
AFQT IV	2	0	0	0	2	1	0	0	
	<u>2,005</u>		<u>223</u>		<u>185</u>		<u>26</u>		
<b>HSG</b>									
AFQT I & II	21,437	47	3,377	52	1,639	20	309	21	
AFQT IIIA	10,556	23	1,661	26	2,002	24	473	33	
AFQT IIIB	10,601	23	1,356	21	3,771	45	608	42	
AFQT IV	2,808	6	117	2	990	12	53	4	
	<u>45,402</u>		<u>6,511</u>		<u>8,402</u>		<u>1,443</u>		
<b>NHS</b>									
AFQT I & II	862	92	77	93	37	76	2	100	
AFQT IIIA	58	6	6	7	7	14	0	0	
AFQT IIIB	14	1	0	0	5	10	0	0	
AFQT IV	3	0	0	0	0	0	0	0	
	<u>937</u>		<u>83</u>		<u>49</u>		<u>2</u>		

Source: Defense Manpower Data Center.

<sup>a</sup>Category V and Unknown AFQT cases are excluded.

<sup>b</sup>All non-black accessions.

Table 6  
MARINE CORPS  
FY 1981 and 1982 NPS Accessions by Education Level,  
AFQT Category, Sex, and Race<sup>a</sup>

<b>FY 1981</b>									
GED	<b>White<sup>b</sup></b>					<b>Black</b>			
	Male		Female			Male		Female	
	N	%	N	%		N	%	N	%
AFQT I & II	496	33	0	0		27	19	0	0
AFQT IIIA	479	32	0	0		35	25	0	0
AFQT IIIB	508	34	0	0		62	44	0	0
AFQT IV	31	2	0	0		16	11	0	0
	<u>1,514</u>		<u>0</u>			<u>140</u>		<u>0</u>	
<b>HSG</b>									
AFQT I & II	9,074	38	984	55		595	10	137	33
AFQT IIIA	5,338	22	683	38		875	15	228	56
AFQT IIIB	6,470	27	124	7		2,316	40	45	11
AFQT IV	2,889	12	0	0		1,938	34	0	0
	<u>23,771</u>		<u>1,791</u>			<u>5,724</u>		<u>410</u>	
<b>NHS</b>									
AFQT I & II	1,642	28	6	75		97	13	1	50
AFQT IIIA	1,790	31	2	25		204	27	1	50
AFQT IIIB	2,115	37	0	0		361	48	0	0
AFQT IV	219	4	0	0		90	12	0	0
	<u>5,766</u>		<u>8</u>			<u>752</u>		<u>2</u>	
<b>FY 1982</b>									
GED	<b>White<sup>b</sup></b>					<b>Black</b>			
	Male		Female			Male		Female	
	N	%	N	%		N	%	N	%
AFQT I & II	396	32	1	50		23	16	0	0
AFQT IIIA	387	32	1	50		45	32	0	0
AFQT IIIB	431	35	0	0		70	50	0	0
AFQT IV	5	0	0	0		3	2	0	0
	<u>1,219</u>		<u>2</u>			<u>141</u>		<u>0</u>	
<b>HSG</b>									
AFQT I & II	9,010	39	1,002	60		636	12	136	35
AFQT IIIA	5,244	23	665	40		976	18	254	65
AFQT IIIB	6,893	30	9	1		2,602	49	2	1
AFQT IV	1,996	9	0	0		1,121	21	1	0
	<u>23,143</u>		<u>1,676</u>			<u>5,335</u>		<u>393</u>	
<b>NHS</b>									
AFQT I & II	1,085	29	4	80		64	16	2	100
AFQT IIIA	1,232	33	1	20		128	31	0	0
AFQT IIIB	1,419	38	0	0		214	52	0	0
AFQT IV	15	0	0	0		5	1	0	0
	<u>3,751</u>		<u>5</u>			<u>411</u>		<u>2</u>	

Source: Defense Manpower Data Center.

<sup>a</sup>Category V and Unknown AFQT cases are excluded.

<sup>b</sup>All non-black accessions.

school graduates to be white (92 percent white compared to 80 percent for high school graduates among FY 1982 accessions) and are similar to nongraduate accessions (91 percent white) in this regard. GED accessions include a smaller proportion of females (five percent in FY 1981) than do high school graduate accessions (13 percent female), but a larger proportion than nongraduates (under one percent female). These characteristics of GED accessions reflect (1) differential enlistment standards for education groups and the two sexes and (2) ethnic group differences in average AFQT scores.

In addition to providing GED accession characteristics, Tables 3-6 complement Table 1 by showing the effects of supply and demand on the number and distribution of different educational groups across consecutive fiscal years. Just as fewer GEDs are enlisted during "better" recruiting months, fewer GEDs and nongraduates are enlisted during better recruiting years, such as FY 1982. In the Air Force, for example, the number of GEDs accessions decreased by over 50 percent in 1982, and the AFQT distribution for those who were accepted was higher. The Navy and Marine Corps also show a decrease, though a modest one compared to the Air Force, in the number of GED accessions accepted in 1982. It should be noted in examining these accession figures, however, that across all Services, fewer accessions were accepted in 1982, and a larger drop occurred among nongraduates than among GED holders. When examining the characteristics of GED holders, or any group of accessions, the effects of enlistment standards, policies, and supply and demand must be taken into consideration.

As shown in Table 7, GED holders tend to be somewhat older than other accessions. Among FY 1982 accessions, for example, a larger percentage of GED holders (44 percent) than of nongraduates (38 percent) or of high school graduates (20 percent) were age 20 years or older when they entered service.

Table 7

Age Distribution of NPS Accessions, FYs 1979-82,  
by Education Level (percent)<sup>a</sup>

AGE	FY 1979			FY 1980			FY 1981			FY 1982		
	GED	HSG	NHS									
23+	11	10	5	11	11	6	10	11	5	13	13	6
22	5	5	3	5	5	3	5	5	2	6	5	3
21	7	7	4	7	7	5	8	7	4	10	8	4
20	10	11	7	11	12	8	14	12	7	15	12	7
19	17	22	16	19	23	16	19	23	15	19	22	16
18	30	37	39	27	35	30	24	35	29	23	34	31
17	20	9	25	20	7	32	18	7	37	14	6	34
Median Age	18.1	18.2	17.7	18.2	18.3	17.6	18.4	18.3	17.5	18.2	18.5	17.5

Source: Defense Manpower Data Center.

<sup>a</sup>Age at entry into service.

In terms of geographic background, GED accessions are generally similar to other accessions, as shown in Table 8. Modest differences do exist, however. A larger percentage of GED holders than of nongraduates comes from the South and West, and a smaller percentage of GED holders than of either non-graduates or graduates comes from North Central states. This regional distribution of GED accessions is quite similar to the national distribution of GED holders.

**Table 8**  
**Percent of NPS Accessions, FYs 1979-82, From Each  
 Geographic Region by Education Level**

GEOGRAPHIC REGION	FY 1979			FY 1980			FY 1981			FY 1982		
	GED	HSG	NHS									
Northeast	17	22	19	20	21	19	20	21	20	21	21	21
North Central	19	23	29	19	26	29	21	27	29	22	29	28
South	38	37	33	35	35	31	34	34	31	37	33	32
West	24	16	19	25	16	20	25	17	19	19	16	19
Other	2	2	1	1	2	1	1	1	0	0	1	0

Source: Defense Manpower Data Center.

### **Military Performance of GED Holders**

The military performance of GED holders, as measured by "suitability" indices such as attrition rates, has been more similar to that of nongraduates than to that of high school diploma graduates. Although differences between education groups in terms of factors such as aptitude, age, and sex may complicate comparisons, they do not account for the large differences in attrition rates between GED holders and high school diploma graduates. Table 9 shows overall rates of attrition (premature first-term separation) during the first three years of service for male FY 1979 accessions by

**Table 9**

**Percent 0-36 Month Attrition for FY 1979 Male NPS Accessions,  
by Service, AFQT Category, and Education Level**

AFQT Category and Education Level	Service				
	Army	Navy	MC	AF	DoD
<b>Category I &amp; II</b>					
GED	45	35	34	43	40
HSG	15	17	19	19	17
NHS	41	36	38	47	41
<b>Category IIIA</b>					
GED	46	40	48	50	47
HSG	21	20	23	24	22
NHS	43	40	42	45	42
<b>Category IIIB</b>					
GED	45	41	51	55	48
HSG	23	22	24	25	23
NHS	44	42	45	43	43
<b>Category IV</b>					
GED	44	41	51	60	46
HSG	23	28	30	27	26
NHS	44	41	46	43	44

Source: Defense Manpower Data Center.

education group and AFQT category. Within any given AFQT category, the attrition rate for GED accessions is at least 20 percentage points higher than that for diploma graduates. In fact, on a DoD level for FY 1979 accessions in all but the highest of these aptitude groups (Categories I and II), the attrition rate for GED holders is higher than that for nongraduates. Table 10 shows the rates of adverse attrition (premature separation for failure to meet minimum behavioral or performance standards) among the three education groups for FY 1977-1979 male non-prior service accessions. Adverse attrition rates for male GED holders have become as high or higher than those for nongraduates in every Service except the Navy. Table 11 shows adverse attrition rates for female accessions. Adverse attrition rates for female GED holders surpass those of

Table 10

Percent 0-36 Month Adverse Attrition for FY 1977-1979  
Male NPS Accessions by Education Level, Service, and Year of Accession

Service and Education Level	Fiscal Year of Accession		
	1977	1978	1979
<b>Army</b>			
GED	36	35	37
HSG	18	17	17
NHS	39	34	37
<b>Navy</b>			
GED	33	29	30
HSG	16	14	16
NHS	37	29	33
<b>Marine Corps</b>			
GED	33	32	35
HSG	14	15	17
NHS	31	29	34
<b>Air Force</b>			
GED	33	40	41
HSG	16	17	17
NHS	37	36	38

Source: Defense Manpower Data Center.

**Table 11**  
**Percent 0-36 Month Adverse Attrition for FY 1977-79**  
**Female NPS Accessions, by Education and Service**

<b>Education Level</b>	<b>Service</b>			
	<b>Army</b>	<b>Navy</b>	<b>Air Force</b>	<b>Marine Corps</b>
<b>GED</b>	33 (2,372) <sup>a</sup>	25 (1,908)	23 (3,206)	37 (308)
<b>HSG</b>	18 (50,133)	12 (17,849)	10 (33,096)	18 (5,648)
<b>NHS</b>	25 (927)	17 (580)	26 (1,690)	19 (156)

<sup>a</sup>Total number of female accessions FY77-79 appears in parentheses.

female non-high school graduates in three out of four Services. Thus, in terms of military suitability, neither female nor male holders of GED credentials have performed like high school graduates. In recent years, in fact, they have tended to leave service at somewhat higher rates than those without any secondary education credential.

A comparison of the data in Tables 10 and 11 shows that among GED holders, adverse attrition rates are higher for males than for females. The same sex difference is found for nongraduates and for Navy and Air Force high school graduates. Among Army and Marine Corps FY 1979 high school graduates, males and females showed very similar adverse attrition rates.

Table 12 shows adverse attrition rates for each education group by age at entry. At every age and for each Service, attrition rates for GED holders are much closer to those for nongraduates than to those for high school graduates. In comparing GED holders' adverse attrition rates to those for other education

**Table 12**  
**Percent 0-36 Month Adverse Attrition Among FY 1979  
 NPS Accessions by Education Level, Age, and Service**

Age at Entry	Army			Navy			Air Force			Marine Corps			DoD		
	GED		HSG	GED		HSG	GED		HSG	GED		HSG	GED		HSG
	37 (591) <sup>a</sup>	14 (6,726)	34 (4,712)	30 (1,279)	12 (5,089)	32 (6,629)	43 (1,555)	16 (4,571)	42 (1,548)	29 (286)	11 (3,112)	28 (4,347)	37 (3,711)	13 (19,498)	32 (17,236)
17	35 (2,183)	13 (29,102)	33 (17,620)	25 (1,362)	11 (22,055)	25 (5,256)	39 (1,599)	14 (19,801)	30 (1,435)	28 (288)	11 (12,524)	26 (3,017)	33 (5,432)	12 (83,482)	30 (27,328)
18	32 (1,169)	16 (17,941)	31 (7,277)	25 (840)	14 (12,664)	24 (2,167)	28 (944)	15 (11,360)	29 (730)	28 (180)	14 (6,338)	30 (1,196)	29 (3,133)	15 (48,303)	30 (11,370)
19	32 (740)	17 (9,624)	32 (3,671)	22 (441)	15 (6,436)	26 (717)	28 (6,172)	14 (339)	25 (96)	39 (2,688)	17 (459)	30 (1,884)	16 (24,920)	31 (5,186)	
20	29 (476)	17 (5,717)	25 (2,201)	18 (269)	14 (3,756)	26 (362)	26 (426)	12 (4,048)	27 (184)	32 (62)	19 (1,356)	34 (237)	29 (1,233)	15 (14,877)	33 (2,984)
21	32 (370)	17 (3,937)	31 (1,309)	20 (163)	15 (2,575)	29 (2,4)	21 (377)	12 (3,090)	21 (138)	24 (37)	18 (805)	37 (127)	26 (877)	15 (10,407)	31 (1,778)
22	33 (828)	19 (9,390)	33 (2,705)	21 (447)	16 (5,451)	29 (363)	18 (654)	8 (6,899)	22 (277)	33 (63)	23 (1,313)	41 (195)	25 (1,992)	15 (23,053)	32 (3,540)
23 and older															

Source: Defense Manpower Data Center.

<sup>a</sup>Total number of accessions appears in parentheses.

groups, one notes that there is a stronger relation between age and attrition among GED holders than among the other two education groups. The education by age interaction for GEDs compared to nongraduates is illustrated in Figure 1. For those below age 19, GED holders leave service at slightly higher rates than nongraduates; among accessions age 20 or older, the nongraduates have higher attrition rates. Although the highest single adverse attrition rate in Table 12 is for GED holders who entered service at age 17, among individuals age 21 or older, the adverse attrition rates for GED holders range from five to seven percent below the corresponding rates for nongraduates. The magnitude of the difference between adverse attrition rates for GED holders and high school graduates varies with age also. Among those who were 17 or 18 years old at the time of entry, GED holders have an adverse attrition rate over 20 percent higher than that for diploma graduates DoD-wide. Among accessions age 21 years or older at the time of entry, the GED attrition rate averages 10 to 11 percent above that for high school graduates.

A performance measure related to attrition rate but more sensitive - months served--was used in analyses of variance. The mean number of months served during the first three years of enlistment was compared for non-prior service male accessions in the three education groups. Table 13 shows these means for each Service for FY 1977, 1978, and 1979 cohorts. For these cohorts, the average high school graduate served roughly from 3.5 to 5.5 more months of his term than the average GED holder. The relative perseverance of GED holders compared to nongraduates changed over this time period. Among FY 1977 accessions, GED holders served 1.2 months longer than nongraduates DoD-wide, with averages between one and two months longer than those for nongraduates in each Service except the Marine Corps. However, the FY 1978 cohort shows a mixed pattern, and the FY 1979 cohort shows the opposite relationship

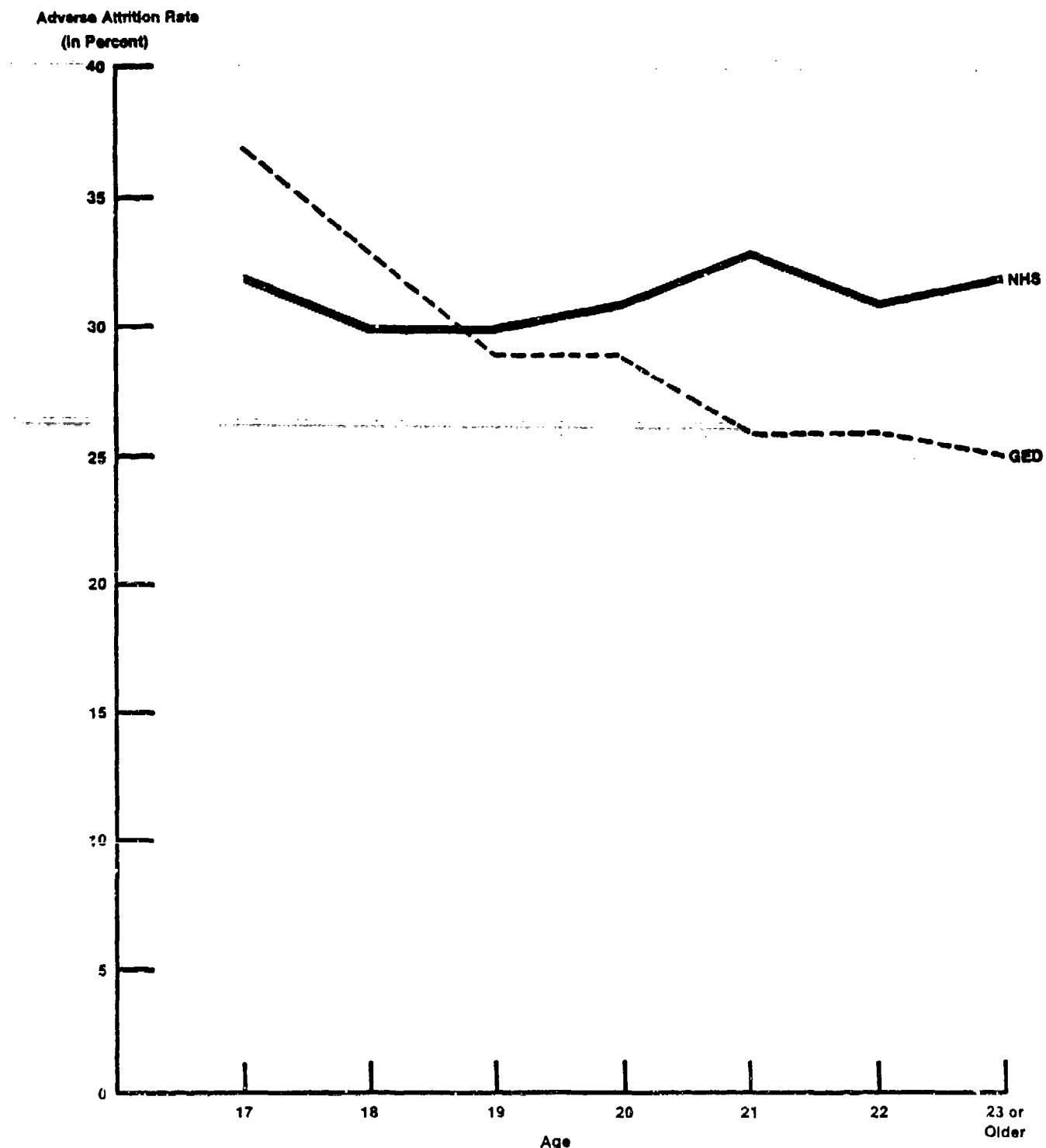


Figure 1. Comparison of 0 - 36 Month Adverse Attrition Rates for FY 1979 GED and Nongraduate Accessions by Age At Service Entry

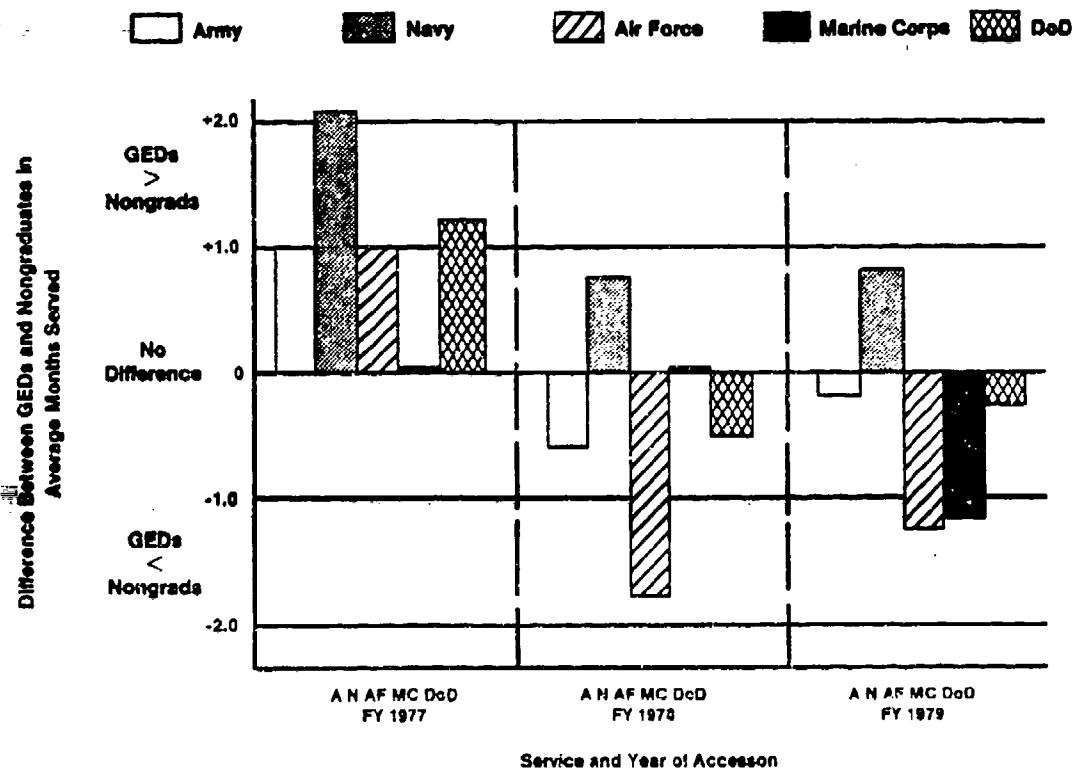
Table 13

**Mean Number of Months Served (0-36) by NPS Male Accessions,  
by Year of Entry, Service, and Education Level**

<b>Service and Year of Entry</b>	<b>Educational Level</b>		
	<b>GED</b>	<b>HSG</b>	<b>NHS</b>
<b>FY 1977</b>			
Army	23.45	28.89	22.46
Navy	23.53	29.18	21.46
Air Force	23.88	29.68	22.89
Marine Corps	23.20	29.23	23.18
DoD	23.52	29.19	22.34
<b>FY 1978</b>			
Army	24.42	29.72	24.92
Navy	25.03	29.64	24.11
Air Force	22.90	29.85	24.52
Marine Corps	24.66	29.15	24.57
DoD	24.18	29.66	24.66
<b>FY 1979</b>			
Army	20.73	24.36	20.92
Navy	21.69	23.88	20.92
Air Force	19.95	24.24	21.19
Marine Corps	20.40	23.60	21.53
DoD	20.71	24.09	21.02

with nongraduates outlasting GED holders in three out of four Services. Among FY 1979 male accessions as a whole, nongraduates average one-third month longer service than GED holders. In the Air Force and the Marine Corps, the gap is wider--nongraduates on the average serve a full month longer than GED holders. This trend is illustrated in Figure 2. Although these differences do not sound large in magnitude, they are statistically significant.

Another measure of an individual's value to the service is retention beyond the first term. This variable is affected by both attrition rate and propensity to reenlist. Although GED holders and nongraduates who successfully complete their first term generally are more likely than high school



**Figure 2. Difference Between GED Credential Holders and Nongraduates in Months Served (0 - 36) for NPS Male Accessions, FY 1977-1979**

diploma graduates to choose to reenlist, their chances of getting through an initial term are considerably smaller and they are less likely to be eligible to reenlist.

Retention rates are shown for recent cohorts of GED, nongraduate, and graduate accessions, by AFQT category, in Table 14 for those who enlisted for initial three-year terms and in Table 15 for those who enlisted for four-year terms. Although differences between education groups are less pronounced when retention rates are examined than when attrition is analyzed, high school graduates are retained to a greater extent than the other groups. Among FY 1977 accessions, high school graduates were seven percent more likely than GEDs to stay in service beyond an initial four-year term. Among FY 1978

Table 14

Retention Beyond the First 36 Months for FY 1978 and 1979  
Accessions with Initial Three-Year Enlistments<sup>a</sup>  
(percent)

AFQT Category	Education Level		
	GED	HSG	NHS
FY 1978 Accessions			
I & II	27	31	29
IIIA	30	31	28
IIIB	28	33	29
IV	33	36	31
Total	30	33	30
FY 1979 Accessions			
I & II	29	36	30
IIIA	29	36	29
IIIB	31	37	30
IV	32	39	32
Total	31	38	31

Source: Defense Manpower Data Center, special analyses.

<sup>a</sup>Those still in service beyond expiration of the initial term.

Table 15

**Retention Beyond the First 48 Months for FY 1977 and 1978  
Accessions with Initial Four-Year Enlistments<sup>a</sup>  
(percent)**

<b>AFQT Category</b>	<b>Education Level</b>		
	<b>GED</b>	<b>HSG</b>	<b>NHS</b>
<b>FY 1977 Accessions</b>			
I & II	29	37	27
IIIA	25	30	22
IIIB	24	30	23
IV	24	31	23
<b>Total</b>	<b>26</b>	<b>33</b>	<b>23</b>
<b>FY 1978 Accessions</b>			
I & II	36	47	32
IIIA	28	41	28
IIIB	28	40	28
IV	30	39	29
<b>Total</b>	<b>31</b>	<b>43</b>	<b>29</b>

**Source:** Defense Manpower Data Center, special analyses.

<sup>a</sup>Those still in service beyond expiration of the initial term.

accessions, they were 12 percent more likely to stay beyond a four-year term and three percent more likely to stay beyond a three-year term. FY 1979 high school graduate accessions were seven percent more likely than GEDs to stay in service beyond a three-year term. Thus, the higher propensity to reenlist among GED holders and nongraduates is not sufficient to compensate completely for their higher first-term attrition rates (relative to high school graduates). Differences among education groups are more pronounced among those enlisted for four-year terms than among those enlisted for three-year terms.

#### **Occupational Assignments**

A potentially confounding variable in studies of attrition rates is occupational assignment. Some military occupations have much stiffer training

Table 17

**Occupational Assignments for FY 1980 Male  
Accessions by Education Level and Service (in percent)**

LATEST OCCUPATION	ARMY			NAVY			AIR FORCE			MARINE CORPS			DDO							
	NHS	GED	HSG Total	NHS	GED	HSG Total	NHS	GED	HSG Total	NHS	GED	HSG Total	NHS	GED	Total					
0. Infantry/ Gun Crews/ Seamen Specs	38	26	27	32	3	2	25	8	8	8	38	38	29	31	31	13	16	20		
1. Electronic Equipment Repairmen	2	4	4	3	4	11	12	11	16	8	13	13	1	1	5	4	3	7	9	7
2. Communication & Intelligence Specs	10	11	12	11	6	7	8	7	3	2	5	5	6	6	6	6	6	8	8	
3. Medical & Dental Specs	2	5	4	3	2	4	5	4	3	3	3	3	0	0	0	2	4	4	3	
4. Other Tech. & Allied Specs	1	2	2	2	0	0	1	1	2	2	3	3	1	1	1	1	1	2	2	
5. Functional Support & Administration	6	10	9	8	4	4	6	5	14	14	16	15	6	8	9	6	9	10	9	
6. Electrical/ Mechanical Equip. Repair	13	12	15	14	21	21	28	26	26	31	27	27	8	8	16	14	14	21	22	20
7. Craftsmen	2	2	3	3	4	5	6	5	6	7	6	6	2	2	3	3	3	4	4	4
8. Service & Supply Handlers	8	8	12	10	5	4	4	4	8	10	9	9	11	10	14	13	8	7	9	9
In Training	19	20	11	15	51	47	29	34	14	16	11	12	28	25	17	19	24	26	17	20
<b>Total</b>	<b>63,198</b>	<b>5,185</b>	<b>66,165</b>	<b>134,548</b>	<b>14,117</b>	<b>6,096</b>	<b>55,256</b>	<b>75,469</b>	<b>2,721</b>	<b>6,334</b>	<b>49,307</b>	<b>58,362</b>	<b>78590</b>	<b>1,365</b>	<b>29,056</b>	<b>38,280</b>	<b>87,895</b>	<b>18,980</b>	<b>199,784</b>	<b>306,659</b>

Source: Defense Manpower Data Center analyses, March 1984.

Table 16  
Occupational Assignments for FY 1979 MPS Male  
Accessions by Education Level and Service (in percent)

LATEST OCCUPATION	ARMY				NAVY				AIR FORCE				MARINE CORPS				DOD Total
	NHS	GED	HSG	Total	NHS	GED	HSG	Total	NHS	GED	HSG	Total	NHS	GED	HSG	Total	
1. Infantry/Gun Crews/Seamen Specs	35	30	29	31	4	3	3	3	9	8	8	8	37	31	29	31	27
2. Electronic Equipment Repairmen	2	4	5	4	5	12	12	11	11	6	11	11	1	2	5	4	3
3. Medical & Dental Specs	8	8	10	9	5	6	7	6	4	3	6	6	6	5	7	7	7
4. Other Tech. & Allied Specs	1	2	2	2	0	0	1	1	2	2	3	3	1	1	1	1	2
5. Functional Support & Administration	5	6	8	7	4	4	6	6	15	16	18	18	6	10	10	9	5
6. Electrical/Mechanical Equip. Repair	16	15	16	23	25	32	30	27	28	24	25	11	10	18	16	18	21
7. Craftsmen	2	2	3	3	4	5	6	6	7	5	6	2	2	3	3	3	4
8. Service & Supply Handlers	10	9	13	12	5	3	3	4	8	10	9	9	7	12	11	9	9
In Training	17	18	10	13	47	39	24	30	17	18	11	12	26	31	15	19	25
Total	38,985	6,288	65,065	110,338	14,842	3,663	49,875	68,380	3,841	4,494	44,763	53,098	9,383	975	25,793	36,151	67,051
																	15,420 185,496 267,967

Source: Defense Manpower Data Center analyses, March 1984.

requirements than others; some provide training with greater value in the civilian labor market; some offer bonuses for reenlisting; and some offer better working conditions. Thus, differences across specialties in mean attrition rates are to be expected, and do in fact occur. Differences among education groups in terms of the occupations to which they are typically assigned could be hypothesized as a potential contributor to differences in attrition rates.

Tables 16, 17, 18, and 19 show the percentage of male accessions in the three education groups assigned to each general occupational area for the FY 1979-1982 cohorts. Although some specific occupations require a high school diploma and do not accept GED holders, on a DoD-wide level the general picture suggests that GED holders are distributed across occupational areas in a manner roughly comparable to that of high school diploma graduates. The one major exception is that GED holders consistently are more likely to lack a specialty (i.e., be in training).

On a Service-by-Service level, some other differences in occupational assignment patterns do become apparent. In the Navy, GED holders, like non-graduates, are less likely than high school graduates to be assigned to electrical/mechanical equipment repair ratings but equally likely to be electronic equipment repairers. In the Air Force, GED holders are less likely than either high school graduates or nongraduates to be placed in an electronic equipment repairman specialty. In the Marine Corps, GED holders entering between 1980 and 1982 have had an assignment pattern similar to that of nongraduates: They are more likely to be assigned to combat specialties (or training) and less likely to be electrical/mechanical equipment repairers or service and supply handlers. (This finding is to be expected since the Marine

Table 18  
Occupational Assignments for FY 1981 MPS Male  
Accessions by Education Level and Service (In percent)

LATEST OCCUPATION	ARMY			NAVY			AIR FORCE			MARINE CORPS			EDD							
	NHS	GED	HSG Total	NHS	GED	HSG Total	NHS	GED	HSG Total	NHS	GED	HSG Total	NHS	GED	HSG Total					
0. Infantry/ Gun Crews/ Seamen Specs	39	30	27	23	1	1	1	1	7	7	7	7	38	40	25	28				
1. Electronic Equipment Repairmen	3	5	4	4	6	11	10	17	10	15	15	0	0	3	2	4				
2. Communication & Intelligence Specs	12	15	11	12	7	7	8	3	3	4	4	6	5	7	6	9				
3. Medical & Dental Specs	1	4	4	2	3	4	4	3	2	3	3	0	0	0	0	1				
4. Other Tech. & Allied Specs	2	2	2	0	0	1	1	2	2	3	3	1	0	1	1	1				
5. Functional Support & Administration	10	11	12	12	4	4	4	9	9	11	11	4	4	8	7	7				
6. Electrical/ Mechanical Equip. Repair	13	13	17	16	15	14	22	20	30	32	29	5	5	12	11	13				
7. Craftsmen	1	1	3	3	4	3	5	4	4	5	4	1	1	3	2	2				
8. Service & Supply Handlers	11	10	13	12	4	4	3	3	8	9	9	12	11	15	14	9				
In Training	8	8	7	7	59	58	40	50	22	21	14	15	32	34	26	28				
<b>Total</b>	<b>18,504</b>	<b>3,084</b>	<b>76,931</b>	<b>98,519</b>	<b>11,381</b>	<b>9,662</b>	<b>59,569</b>	<b>80,612</b>	<b>2,215</b>	<b>4,719</b>	<b>59,129</b>	<b>66,064</b>	<b>6,470</b>	<b>1,645</b>	<b>29,339</b>	<b>37,454</b>	<b>38,571</b>	<b>19,110</b>	<b>224,968</b>	<b>282,649</b>

Source: Defense Manpower Data Center analyses, March 1984.

Table 19

**Occupational Assignments for FY 1982 NPS Male  
Accessions by Education Level and Servicea (In percent)**

LATEST OCCUPATION	ARMY			NAVY			AIR FORCE			MARINE CORPS			DOD				
	MHS	GED	HSG Total	MHS	GED	HSG Total	MHS	GED	HSG Total	MHS	GED	HSG Total	MHS	GED	HSG Total		
0. Infantry/ Gun Crews/ Seamen Specs	30	23	24	25	1	1	0	1	5	5	6	6	22	22	8	10	
1. Electronic Equipment Repairmen	3	5	3	3	2	2	2	11	7	6	6	0	0	0	0	3	
2. Communication & Intelligence Specs	10	9	8	8	4	3	3	3	2	2	2	4	3	0	2	7	
3. Medical & Dental Specs	2	4	2	2	1	1	2	2	2	2	2	0	0	0	0	4	
4. Other Tech. & Allied Specs	2	2	1	1	0	0	0	1	1	1	1	1	1	0	1	2	
5. Functional Support & Administration	5	7	6	6	3	3	2	2	6	5	6	6	2	3	3	5	
6. Electrical/ Mechanical Equip. Repair	17	13	9	10	10	10	13	16	13	13	2	2	2	2	12	10	
7. Craftsmen	2	1	1	1	3	3	2	2	3	3	3	1	1	1	1	2	
8. Service & Supply Handlers	10	10	9	9	4	4	1	2	4	4	4	5	5	3	3	5	
In Training	20	25	37	34	71	75	77	76	54	55	59	58	62	63	80	77	
<b>Total</b>	<b>12,624</b>	<b>3,112</b>	<b>86,526</b>	<b>102,262</b>	<b>7,372</b>	<b>7,681</b>	<b>49,009</b>	<b>64,052</b>	<b>482</b>	<b>2,175</b>	<b>54,615</b>	<b>57,772</b>	<b>4,116</b>	<b>1,339</b>	<b>27,089</b>	<b>32,543</b>	<b>25,094</b>
																<b>14,306</b>	
																<b>217,239</b>	
																<b>256,539</b>	

Source: Defense Manpower Data Center analyses, March 1984.

a immature data.

Corps is the one Service where GED holders are regarded as nongraduates.) The similarity between GED holders and high school graduates in terms of assignment patterns is most apparent in the Army, where they are both considerably less likely than nongraduates to be assigned to a combat specialty.

To investigate whether these differences in assignment patterns were largely accountable for the attrition rate differences among education groups, attrition rates for each education group within occupation group and Service were examined. These data, computed for the FY 1979, 1980, and 1981 male non-prior service cohorts combined, are displayed in Table 20. As that table shows, overall attrition rates vary considerably across occupation groups, ranging from 9 percent for code 1 - electronic equipment repair to 27 percent for code 0 - infantry. The attrition rate for men without a specialty code (assigned to training) was 68 percent DoD-wide and as high as 80 or 90 percent in several Services. After the first 6 to 12 months of service, most recruits have a specialty code. Lack of a code after this point in the first term of enlistment generally indicates marginal performance and hence is often a precursor to attrition.

As Table 20 shows, there also are differences across the four Services in attrition rates for a given specialty area. For example, the average attrition rates for men assigned to occupations coded electrical/mechanical equipment repair were 21 percent in the Army, 9 percent in the Navy, 17 percent in the Air Force, and 11 percent in the Marine Corps.

Differential effects of occupational assignment upon attrition rates for the three education groups can be removed by comparing attrition rates for high school graduates, nongraduates, and GED holders within each occupation

Table 20

Percent 0-36 Month Attrition for WPS Male Accessions,  
FYS 1979-81, by Occupation Group, Education Level, and Service  
(sample sizes appear in parentheses)

OCCUPATION GROUPING CODE	ARMY			NAVY			AIR FORCE			MARINE CORPS			DoD								
	NHS		GED	NHS		GED	NHS		GED	NHS		GED	NHS		GED	HSG	Total				
	NHS	GED	HSG	Total	NHS	GED	HSG	Total	NHS	GED	HSG	Total	NHS	GED	HSG	Total					
0	43 (44,515)	43 (4,182)	21 (57,702)	31 (106,399)	13 (1,476)	14 (5,207)	6 (580)	31 (7,263)	35 (624)	36 (1,071)	13 (11,039)	16 (12,734)	32 (8,896)	31 (1,482)	17 (23,056)	21 (33,434)	40 (55,511)	37 (7,315)	18 (97,004)	27 (159,830)	
1	25 (2,833)	22 (624)	10 (9,366)	14 (12,823)	13 (1,784)	12 (1,759)	5 (19,423)	27 (22,966)	27 (1,240)	23 (1,238)	8 (4,504)	11 (22,843)	8 (251)	7 (59)	3 (20,365)	3 (4,814)	21 (6,108)	17 (3,680)	7 (53,658)	9 (63,446)	
2	35 (11,520)	35 (1,536)	16 (23,601)	23 (36,657)	20 (2,393)	18 (1,393)	8 (13,393)	10 (17,179)	23 (270)	26 (403)	9 (8,253)	10 (8,926)	23 (1,484)	19 (202)	10 (5,636)	13 (7,322)	32 (15,667)	27 (3,534)	12 (50,883)	17 (70,084)	
3	35 (2,681)	29 (727)	14 (9,107)	19 (12,515)	21 (905)	20 (722)	11 (7,743)	13 (9,370)	43 (227)	42 (396)	15 (4,898)	18 (5,321)	18 (8)	11 (11)	13 (118)	13 (27)	32 (13,821)	29 (1,846)	13 (21,766)	17 (27,433)	
4	32 (1,674)	33 (264)	11 (4,137)	17 (6,075)	12 (83)	11 (57)	6 (1,295)	7 (1,435)	29 (1,99)	29 (284)	12 (4,544)	12 (5,027)	16 (218)	16 (31)	9 (1,091)	10 (1,340)	29 (2,174)	28 (636)	10 (11,067)	14 (13,877)	
5	34 (7,452)	32 (1,217)	16 (20,744)	21 (29,413)	21 (1,559)	18 (840)	8 (10,015)	10 (12,514)	46 (1,145)	51 (12,018)	23 (22,693)	26 (25,856)	24 (1,342)	25 (233)	12 (8,007)	14 (9,642)	32 (11,598)	38 (4,368)	17 (61,453)	20 (77,425)	
6	32 (17,018)	30 (1,990)	15 (33,713)	21 (52,721)	17 (8,854)	17 (3,847)	9 (48,964)	9 (61,565)	35 (2,288)	35 (4,735)	14 (41,501)	17 (48,524)	20 (2,064)	19 (303)	9 (13,638)	11 (16,005)	27 (30,222)	27 (10,875)	11 (137,816)	15 (178,913)	
7	34 (2,411)	34 (301)	17 (6,482)	22 (9,194)	18 (1,772)	21 (849)	8 (9,688)	10 (12,309)	39 (883)	37 (982)	17 (7,857)	21 (9,322)	25 (397)	12 (67)	14 (2,365)	14 (2,829)	29 (5,033)	30 (2,199)	13 (26,372)	17 (33,654)	
8	38 (10,899)	36 (1,306)	17 (26,135)	24 (38,340)	31 (1,955)	29 (75)	14 (6,025)	19 (8,737)	36 (2,556)	38 (1,497)	17 (13,736)	20 (15,931)	27 (698)	30 (407)	13 (12,153)	16 (15,116)	35 (16,108)	35 (3,967)	16 (58,049)	21 (88,124)	
In Training	88 (19,630)	87 (2,406)	75 (17,028)	81 (35,114)	66 (19,219)	64 (8,627)	55 (42,486)	59 (70,332)	92 (11,566)	44 (2,916)	44 (18,193)	54 (22,675)	92 (2,675)	93 (6,440)	88 (1,139)	90 (13,696)	80 (21,275)	76 (46,855)	68 (15,088)	68 (91,453)	68 (153,396)
Total	120,633	14,553	208,065	343,291	40,100	19,431	164,239	223,770	6,896	15,541	153,079	172,143	23,656	3,984	84,164	111,904	193,129	53,508	609,547	856,184	

Key to Occupation Grouping Codes:  
 0=Infantry/Gun Crews/Seamers Specs  
 1=Electronic Equipment Repairmen  
 2=Communication & Intelligence Specs  
 3=Medical & Dental Specs  
 4=Other Technical & Allied Specs  
 5=Functional Support & Administration  
 6=Electrical/Mechanical Equipment Repair  
 7=Craftsmen  
 8=Service & Supply Handlers

Source: Defense Manpower Data Center analyses, March 1984

group within a given Service. These data show that for 29 of the 32 occupation-Service combinations, both GED holders and nongraduates have attrition rates that are more than double the rate for high school graduates. Even the three "exceptions" showed the same trend. In the infantry specialties of the Marines, attrition rates were 32 percent for nongraduates, 31 percent for GED holders, and 17 percent for high school graduates. Among medical/dental specialties in the Navy the rates were 21 percent for nongraduates, 20 percent for GED holders, and 11 percent for high school graduates. Among those assigned to a specialty in group 4 (other technical specialties) in the Marines, the nongraduate attrition rate is 16 percent compared to 9 percent for graduates, and there were too few GED holders in the specialty to yield a stable estimate of an attrition rate.

When viewed within occupation group and Service over these three cohorts (FYs 1979-81), attrition rates for GED holders and non-high school graduates are remarkably similar--typically within two percentage points of one another. Thus, although occupational assignment patterns vary somewhat across education groups, this analysis of attrition patterns within occupation groups suggests that these differences do not mitigate the large gap between attrition rates for high school graduates on the one hand and GED holders and nongraduates on the other. In short, when their performance is measured by first-term attrition and examined within occupation group and by Service, GED holders perform like nongraduates and not like high school graduates.

#### **Codes for Education Level**

GED holders' rate of attrition from military service has been rising since the 1970s. At the same time, the number of alternative secondary

education credentials available to young people has increased (Laurence, 1983). It has been speculated that the increased rate of premature separation recorded for GED accessions might be attributable, in part, to the way in which education codes are assigned. If individuals with other types of high school equivalency certificates are given the same code in Defense databases as GED holders, attrition rates published for GED holders might be contaminated by inclusion of these other groups.

The nearly 40,000 new recruits who took the Educational and Biographical Information Survey (EBIS) in 1983 provided a means of checking the feasibility of this conjecture. As part of an OSD-funded study to evaluate and improve education standards for enlistment, EBIS respondents were asked detailed questions concerning the type of education credential they held. Specifically, they were asked both if they held a GED credential and if they held an equivalency certificate based on a test other than the GED. Individuals' EBIS response records subsequently were linked with their Defense Manpower Data Center (DMDC) records, permitting a comparison of the education code recorded by DMDC with the credential the individual reported on the EBIS. Table 21 shows this comparison, by Service. Overall, 89 percent of the recruits coded as GED holders on their DMDC records reported holding GED credentials when they took the EBIS. Thus, although DMDC files include some individuals with other types of equivalencies who are coded as GEDs, the overwhelming majority of the individuals coded as GED holders by DMDC appear to be individuals who have in fact earned that credential. A few individuals coded as GED holders by DMDC reported holding other types of equivalencies (four percent) or adult education diplomas (two percent) when taking the EBIS, but these proportions are not large enough to seriously affect estimates of attrition rates for GED holders as a whole.

Table 21

**Credential Reported by EBIS Recruit Respondents  
Classified as GED Holders on DMDC Files  
(percent)**

<b>Credential Reported on EBIS</b>	<b>Service</b>				
	<b>Army</b>	<b>Navy</b>	<b>Air Force</b>	<b>Marine Corps</b>	<b>DoD</b>
Regular Diploma	2	4	6	1	3
GED	90	87	90	92	89
Other Equivalency	3	6	2	4	4
Adult Education	3	2	2	1	2
Correspondence	<1	<1	1	0	<1
None of These	1	1	0	2	1

Source: Defense Manpower Data Center, special analyses.

This section of the report has included both a presentation of military performance data--primarily attrition rates--for GED holders, graduates, and nongraduates and an examination of other factors, both pre-service and in-service, which could account for some of the observed differences between education groups. The conclusions of this review can be stated quite simply: The performance of GED holders is very similar to that of nongraduates, with one or the other group appearing very slightly superior depending upon the age, occupation, and cohort year examined. The difference between GED holders and high school graduates, on the other hand, is quite large and is affected only minimally by these other variables.

### **GED/Accession Sample**

The ASVAB and AFQT were designed as aptitude measures for predicting ability to profit from military training. In contrast, the GED tests were developed to measure existing skills related to academic subject matter. However, the distinction between aptitude and achievement tests becomes quite fuzzy in practice. Despite the difference between the GED and ASVAB in terms of origins and purposes, the two batteries could be expected to yield highly correlated scores. The AFQT has been shown to correlate highly with various measures of reading ability (Mathews, Valentine, & Sellman, 1982), and it seemed reasonable to expect ASVAB scores to be related also to other academic skill measures included in the GED battery.

The GED Testing Service made available a tape containing test scores, age, and Social Security Numbers for all individuals who took the GED examination during April and May of 1980. The Defense Manpower Data Center (DMDC) matched this tape with accession files for FYs 1979-1981, thus creating a linked file for individuals who took the GED and entered service during the specified time frame.

#### **Sample Characteristics**

This GED examinee/accession sample contains 307 individuals distributed across Services as shown in Table 22. As shown there, the Army had the largest share of these accessions (42 percent) and the Marine Corps took relatively few (6 percent). The sample is 88 percent male and 12 percent female, closely approximating the distribution of the two sexes DoD-wide. The sample under-represents blacks slightly relative to the Services generally: The GED/accession sample is comprised of 13 percent blacks, 76 percent whites, and 4 percent other racial groups.

Table 22  
GED Examinee/Accession Sample by Service

<b>Service</b>	<b>Number</b>	<b>Percentage<sup>a</sup></b>
Army	339	42
Navy	133	16
Air Force	148	18
Marine Corps	47	6
Preinductee	99	12
Army Reserve	25	3
Air Force Reserve	8	1
National Guard	8	1

**Source:** Defense Manpower Data Center, special analyses.

<sup>a</sup>Of total sample of 807.

The ages at which sample members took the GED and entered service are shown in Table 23. Most of these individuals took the GED at age 17 (33 percent) or 18 (25 percent). The most frequent age at time of service entry was 18 years (28 percent), followed by 17 years (25 percent), and 19 years (22 percent). Thus, although GED accessions traditionally have been somewhat older than accessions as a whole, this GED/accession sample was quite young at the time of service entry.

The proportion of the sample meeting American Council on Education recommended requirements for passing the GED examination is shown in Table 24. Approximately 81 percent of the examinees in this sample met that requirement. This percentage is considerably higher than that reported by ACE for all GED examinees (roughly two-thirds) or for the norming sample (74 percent). This high pass rate for individuals in the GED/accession sample no doubt results from the fact that all accessions had to receive a qualifying AFQT score for their Service.

**Table 23**  
**Age at Time of Examination and at Accession for  
 GED Examinee/Accession Sample**

Age	Age at Testing		Age at Entry	
	Number	Percentage <sup>a</sup>	Number	Percentage <sup>b</sup>
23+	31	5	64	8
22	9	2	27	3
21	14	2	41	5
20	28	5	79	10
19	74	13	174	22
18	145	25	224	28
17	188	33	198	25
16 & under	83	15	--	--
Age unknown	235	--		
<b>Total</b>	<b>807</b>			

Source: Defense Manpower Data Center, special analyses.

<sup>a</sup>Of sample for which age at testing was on record

<sup>b</sup>Of total sample

**Table 24**  
**GED Performance of GED Examinee/Accession Sample**

Test Performance	Number	Percentage <sup>a</sup>
Pass	411	81
Fail	96	19
No Record	300	

Source: Defense Manpower Data Center, special analyses.

<sup>a</sup>Percentage of sample with test outcome on record.

**Table 25**  
**Mean GED Subtest Scores for Examinees Entering  
Military Service, FYs 1979-81**

<b>GED Subtest<sup>a</sup></b>	<b>n</b>	<b><math>\bar{X}</math></b>	<b>SD</b>
Writing Skills	697	45.33	6.80
Social Studies	671	48.74	7.13
Science	641	50.23	7.24
Reading Skills	640	49.34	7.25
Mathematics	609	48.40	6.36

**Source:** Defense Manpower Data Center, special analyses.

<sup>a</sup>GED subtest scores are on a standard score scale with a mean of 50 and a standard deviation of 10.

Table 25 shows the performance of the sample on each of the GED subtests: writing skills, social studies, science, reading skills, and mathematics. Relative to the GED norming sample, military accessions holding GED credentials do best on the science subtest ( $\bar{X}=50$ ) and poorest on writing skills ( $\bar{X}=45$ ).

#### **Relationship Between GED Scores and ASVAB Scores**

The DMDC accession file contains ASVAB scores only for those who qualified for, and entered, service. Thus the range of scores is restricted. To better examine the relationships between GED examination scores and ASVAB scores, the GED April-May 1980 examinee file was matched against DMDC's ASVAB examinee file (i.e., the full cohort of individuals who applied for military service rather than just those who entered). This 1,598-person match produced

884 individuals who took the GED and ASVAB Form 5, 6, or 7 and 714 individuals who took the GED and ASVAB Form 8, 9, or 10.

Admittedly, these are still somewhat restricted samples since recruiters discourage those with obviously low aptitude or with poor scores on preliminary screening devices from taking the ASVAB. Nevertheless, even without correction for restriction in range, the correlation between average GED subtest score and AFQT score is quite high:  $r=.75$  for ASVAB 5, 6, and 7 and .79 for ASVAB 8, 9, and 10. The correlations between subtests on the two batteries are shown in Table 26. The ASVAB 8, 9, and 10 subtests with the highest correlation to each GED subtest are shown in Table 27. The highest correlations appear for the GED Math Subtest and ASVAB Arithmetic Reasoning (.72), GED Social Studies and ASVAB Word Knowledge (.68), and GED Math and ASVAB Math Knowledge (.67). The correlations in Table 27 as a whole suggest that the GED battery, like the ASVAB, places great emphasis on verbal and reading skills.

**Table 26**  
**Correlations between ASVAB and GED Subtests**

<u>ASVAB 5/6/7</u>	GED Subtest				
	Writing	Social Studies	Science	Reading	Math
General Information	.31	.48	.46	.37	.38
Numerical Operations	.36	.32	.32	.34	.46
Attention to Detail	.95	.02	.08	.07	.17
Word Knowledge	.64	.65	.62	.62	.45
Arithmetic Reasoning	.52	.51	.52	.44	.69
Space Perception	.22	.25	.30	.22	.35
Mathematics Knowledge	.56	.49	.52	.44	.66
Electronics Information	.35	.44	.50	.37	.39
Mechanical Comprehension	.37	.38	.44	.29	.44
General Information	.53	.58	.61	.49	.48
Shop Information	.20	.33	.37	.22	.33
Auto Information	.12	.23	.31	.19	.24
 <u>ASVAB 8/9/10</u>					
General Information	.51	.65	.65	.56	.51
Arithmetic Reasoning	.51	.55	.49	.46	.72
Word Knowledge	.60	.68	.64	.61	.48
Paragraph Comprehension	.53	.63	.59	.59	.51
Numerical Operations	.32	.21	.24	.22	.41
Coding Speed	.24	.17	.20	.16	.29
Auto/Shop Information	.26	.40	.44	.30	.41
Mathematics Knowledge	.53	.50	.49	.42	.67
Mechanical Comprehension	.37	.45	.44	.36	.49
Electronics Information	.36	.48	.48	.36	.42

Source: Defense Manpower Data Center, special analyses.

**Table 27**  
**ASVAB 8/9/10 Subtests Most Highly Correlated  
 with Each GED Subtest**

<u>GED Subtest</u>	<u>Ranking of Correlation Magnitude</u>		
	<u>1</u>	<u>2</u>	<u>3</u>
Writing	WK ( $r=.60$ )	PC ( $r=.53$ )	MK ( $r=.53$ )
Social Studies	WK ( $r=.68$ )	GI ( $r=.65$ )	PC ( $r=.63$ )
Science	GI ( $r=.65$ )	WK ( $r=.64$ )	PC ( $r=.59$ )
Reading	WK ( $r=.65$ )	PC ( $r=.59$ )	GI ( $r=.56$ )
Math	AR ( $r=.72$ )	MK ( $r=.67$ )	PC ( $r=.51$ )

**Key:**  
 WK = Word Knowledge  
 MK = Math Knowledge  
 GI = General Information  
 PC = Paragraph Comprehension  
 AR = Arithmetic Reasoning

## **Summary and Conclusions**

There is widespread concern on the part of the educational community and the general public over the military's education policies and differential aptitude standards for holders of different types of educational credentials. Representatives of the GED program--the largest program of its type--have raised questions concerning the military's treatment of persons with non-traditional credentials. This report addressed issues involving both the military representation of GED holders and the validity of current GED enlistment policies and practices.

GED credential recipients are represented in the Military Services to a larger extent than they are present in the national 18 to 23 year old population. Moreover, for the most part, the demographic characteristics of GED accessions reflect those of the GED population nationally.

Although they are well-represented in the military, GED credential holders are not among the most preferred enlistment candidates. The performance or military suitability indices examined suggest that as a group, GED holders do not warrant preferential or high school graduate treatment for enlistment purposes. For example, attrition rates (both adverse and total) have been much higher for GED holders than for regular diploma graduates. When other suitability measures, such as months served and retention beyond the first term, are examined, GED holders again have failed to perform as well as high school diploma graduates. Not only do the research findings which led to GEDs becoming less preferred than diploma graduates continue to be confirmed, but a slight, but increasing, tendency for nongraduates to outperform GEDs has

emerged as well.<sup>2</sup> The Services' selectivity with regard to the enlistment of GED holders appears amply justified.

Demographic and other potentially confounding variables are not responsible for these performance differences. For example, although attrition is known to vary by military occupation, assignment patterns did not account for performance differences among education groups. GED holders show much higher attrition rates than high school graduates within all occupation groupings and aptitude categories.

The only demographic variable with a substantial effect on this GED-diploma graduate "attrition gap" was age. While there was still a 10-percent difference between GED holders and diploma graduates in attrition rates among older accessions, this was half of the size of the gap for 17- and 18-year-old accessions. Nevertheless, even the 10-percent gap found for older enlistees is quite substantial and translates into great dollar differences when the costs of training and equipping each recruit are considered.

These findings provide support for the Services' current enlistment policies treating GED holders as less preferred candidates than high school diploma graduates. The differential standards applied to the various education groups and the military's desire to enlist high school graduates are based upon suitability differences--not assumed differences in aptitude. Aptitude--whether measured by the AFQT or the GED tests--has not been strongly related to attrition. It seems that high school diploma graduates, on the average, possess motivational or background qualities which make them better suited than GED holders for military service. Possession of a GED credential

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<sup>2</sup>This finding probably results from the greater selectivity applied to non-graduate applicants, and does not reflect upon the relative aptitude or job performance of GED holders and nongraduates in the population as a whole.

indicates that the individual has acquired academic content knowledge similar to that of high school diploma graduates but does not necessarily mean that the bearer has had the same social experiences or background as the traditional graduate.

From the evidence at hand, it is easy to see why GED holders have not been actively recruited in recent years. As long as the supply of better-suited high school diploma graduates is abundant (or at least adequate), fewer military positions will be available for GED holders and nongraduates. However, the Services cannot rest assured that the recruiting market will remain forever favorable, and it would seem prudent to find characteristics associated with military adaptability among less-preferred enlistment candidates. Currently, higher aptitude scores are required of GED holders and nongraduates, but high aptitude does not make up for increased attrition risk--it only ensures that the more trainable applicants are accepted. The Services currently are seeking attitudinal and biographical measures which can be used in screening from within non-diploma graduate applicants to identify the best candidates among this heretofore nonpreferred group. This research effort should be continued. Those non-high school graduates who would become effective military recruits are an important source of military personnel. It is in the best interests of DoD and the applicants that equitable, reliable, valid, and unbiased methods be produced to optimally match persons to military jobs on an individual rather than a group basis. This kind of research shows promise in addressing that goal.

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8